SHOP talk

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Investigating Indoor Air Quality Problems

There's help available from your Consortium staff

By Dorothy Trethewy, POS Resource Coordinator

Facility managers face daily challenges maintaining healthy, productive work environments. Providing comfortable temperatures, adequate lighting, clean rest rooms, and pleasant surroundings consumes maintenance staff time replacing air filters, changing burned out lamps, unclogging drains, and removing graffiti from walls. Add emergencies like the water main breaking, a power bump that knocks electrical equipment off line, or the roof leaking from a torrential rain, and workers drop routine maintenance tasks to react to the latest disaster. If contractors leave a mess in electrical closets and ventilation ductwork disconnected in overhead ceiling spaces, the maintenance staff responds. Administration calls and wants the conference room painted and the carpet replaced by "yesterday!" Despite repeated visits and tinkering with the ventilation system, indoor air quality problems just don't go away in room 2A. Sound familiar? Then, perhaps, Plant Operations can help.

As facilities managers know, indoor air quality problems may be relatively simple or complex to define; easy/cheap or difficult/expensive to fix; and take a couple of weeks or months to solve. Tests may be inconclusive and scientific answers difficult. Linking physical symptoms with specific sources may happen after the fact and involve reconstruction of events, not actual observation. Limitations abound in indoor air quality investigations and should not be minimized, but facilities managers cannot ignore problems, hope they disappear, and fail to respond. People usually don't complain without reason. According to some texts, indoor air quality complaints may be linked to employee dissatisfaction and have no real association to unsatisfactory environmental conditions. These types of complaints can be filtered out by the facility manager in cooperation with supervisors, and should not be used as reason for inaction in responding to complaints of poor air quality.

A timely, appropriate, documented response to each complaint of poor air quality should be standard operating procedure for facility managers. This type of response demonstrates management's commitment to providing a healthy workplace; improves employee morale; fosters cooperation, not confrontation; and may result in solving a minor problem before it escalates into a major headache.

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Dorothy Trethewy,
POS Resource Coordinator and Industrial Hygienist, points out sources of possible contamination in an air ventilation system to Dan Moore, a Zone Coordinator on the State's Capitol Campus.

INSIDE

POS Notes

By Bob MacKenzie, Manager

Congratulations! Your Consortium nabbed first place in the Public Works category of the Outstanding Program Awards competition sponsored by the National Association of State Chief Executives (NASCA). Marsha Tadano Long, director of Washington State's Department of General Administration, will represent the Consortium at NASCA's Annual Conference in Salt Lake City Aug. 21 and 22, accepting the award on your behalf.

"This prestigious award is the latest in a string of Consortium commendations and we are proud to accept on its behalf," said Director Long. "The Consortium has consistently proven that cooperation, shared information, and proactive maintenance efforts have a profound and immediate impact on public facilities and operations."

The Consortium was earlier declared a semi-finalist in the Innovations in American Government competition sponsored by the JFK Center of Harvard University and the Ford Foundation. See more information about your Consortium's trophy room on the web page at www.ga.wa.gov/plant (go to Services, scroll down to Governor Locke photo, click on prestigious awards).

I promised I'd report back to you about the annual conference of the National Association of State Facilities Administrators. This year the meeting took place in beautiful Jackson Hole, Wyoming. A number of facility management topics were discussed in a shirt-sleeves-up environment, but two areas were of particular note to maintenance professionals: one was security of public facilities, the other was Y2K preparedness.

Facilities Security

- Creating and maintaining security awareness is critical for an effective security program. Security awareness must come from 'top down," and emphasis must be provided by state Chief Executives, other cabinet officials and the legislature.
- Levels of security can be outlined in state policy documents and used as a foundation for risk assessments and upgraded security levels.
- Bomb and package training for employees can be obtained from the federal government or state police/local law enforcement agencies. Washington State Patrol provides classes and training on request. Other states have similar agency offerings. Video cameras, magnetometers and other electronic measures are effective and need to be funded by legislatures.
- The American Society of Industrial Security (ASIS) provides guidelines on risk assessments and levels of security. States must balance creating awareness and educating employees, and publishing intelligence material that might prove useful to a potential terrorist or "wacko."

Year 2000 segment, provided courtesy of Ron Sisson, Washington State Department of Transportation.

- Existing leases with private owners don't cover Y2k issues comprehensively.
- Predictions of undependable power for several continuous days shows a need for standby power at sites where vital business functions must be performed even when power is down.
- Security at low visibility sites is a high concern, as communications and power will probably be undependable for periods of time
- Several of the states have ensured that facilities managers and/or crews will be in attendance at the biennium change by canceling all leave, by scheduling a crew walkthrough, or by simply requiring the facilities crew to be on duty at varying times from 9:00 p.m. on December 31, through January 3, 2000.
- Some states are in the process of moving their state-observed holiday from December 31, to January 3, in order to give the industries more time to correct any problems not previously discovered.

Lastly, a warm welcome back to all re-subscribing members and thanks to new members for our joining our "family." Since there is strength in unity, we're enhancing our collective ability to meet our customer needs! The POS staff look forward to supporting you in the years ahead.

Have a great summer!

Bob

The Plant Operations Support Consortium

New members appear in green and renewing members are listed in gray type. Welcome and thanks on behalf of the Consortium!

Universities/Colleges
Cascadia/UW-Bothell
Bellevue CC
Big Bend CC
Clark College
Columbia Basin
CCEdmonds CC
Highline CC
Lower Columbia CC
Renton TC
Shoreline CC
Spokane, Dist. 17
South Seattle CC
Univ. of Washington

Municipalities
City of Bonney Lake
City of Tukwila
Clark County
Kitsap County
Lewis County
Pierce County
Whatcom County

Canada
Attorney General
BC Building Corporation

Ports
Port of Anacortes
Port of Edmonds
Port of Ephrata
Port of Longview
Port of Ridgefield
Port of Sunnyside

School Districts
Anacortes
Cascade
Chehalis
Clover Park
Columbia-Burbank
Coquitlam, BC
Delta, BC
Eatonville
Enumclaw
Federal Way
Issaquah
Ketchican, AK
Marysville
Methow Valley
Mission, BC
Mukilteo
Northshore
North Thurston
Oak Harbor
Ocean Beach
Peninsula
Rochester
Sequim
Snohomish
University Place
Wenatachee
White River
Wishkah Valley

States
Alaska
Idaho Dept. of Admin.
Oregon
Utah

Washington State Agencies
Corrections
Ecology
General Administration
Health
Information Services
Labor & Industries
Liquor Control Board
Military
Natural Resources
Parks & Recreation
School for the Deaf
Social & Health Services
Transportation
Veterans Affairs
Washington State Patrol

Facilities Maintenance: Into the New Millenium!

Join us for a free videoconference on topics affecting us all on Wednesday, October 20, 1999, 9:00 a.m. to 11:00 a.m. at sites around Washington State and the Northwest.

This event will use the K20 Learning Network in Washington State and will bridge to other Consortium members and guest speakers across the country. Learn about the future of facilities maintenance, the latest technology, the hottest custodial procedures, the most successful organizations. Produced by the Plant Operations Support Consortium, sponsored by Johnson Controls, Inc. If you attend one videoconference in 1999, make it this one! Call us @ (360) 902-7257 for details. Mark your calendars and plan to bring your staff.

On the Merits of Fiber Optic Versus T-1 Cable

Two experts provide technical guidance for Consortium members

The following data were supplied by Jay Needleman, Northwestern University Information Technology, and Brian Anderson of the State of Washington's Department of Information Services, in response to a Consortium request for information on the benefits of Fiber Optic versus T-1 cable. ***Shop Talk*** staff are deeply grateful for their assistance.

Needleman

In my opinion, the difference is in "what you really will be providing" in services. T-1's are easy. The transmission is measurable and stable, but it is only 1.5 megabytes per second (mbps). T-1 is 27 times faster than a 56k modem, but it is really faster than that: how many times have you ever actually connected at 56k? T-1 internet connections are fine for looking up research, e-mail, file sharing, and fairly heavy web surfing. They are way too small for hard disk backup, server dumping, teleconferencing, or heavy video application.

Fiber does not have a speed, or at least no one has been able to find the highest speed, yet. Typically, depending on the multiplexer equipment purchased, maintained and owned by the POS member, fiber runs from 45 mbps through many multiples up to 2488 clustered T-1's (known as OC-48). With fiber, your client becomes responsible for pole easements (possibly pole replacements), fiber maintenance, electronics, their maintenance and upgrades, ad infinitum. The point is that you will be paying monthly, annually or daily! Plus, you'll need a body or two or more to manage the entire system.

I can't make your decision, but I do believe that you can leverage more (free installation, Free CSU/DSUs) with T-1 services. At Northwestern, we have privately-owned fiber. We also have just under 30,000 network connections in 250 buildings. Fiber was the less expensive way for us, but I have 12 data technicians working for me. I hope I have helped--ask more if I haven't. (e-mail ***jn@nwu.edu)***

Anderson

I am with the Department of Information Services and have been instrumental in the installation of fiber optic cabling networks in the Washington State Capitol Campus area in Olympia. As with underground conduit routes, we are using aerial routes with agreements from our local utility. Please refer to the WEB page listed below. There is a Master Contract listing of companies that can provide a variety of services in the communications arena. See them at http://www.wa.gov/dis/tsd/contracts/index.htm.

Some things to consider:

- Multimode fiber (62.5mm) is great for 10Meg Ethernet, 4/16Meg Token Ring, most applications up to 100Meg. Distance limitation is typically 2 km.
- Multimode fiber (50mm) is considered the standard for gigabit Ethernet, but has distance limitations.
- Singlemode fiber (8.3mm) is considered unlimited in reference to Bandwidth, but has distance limitations with gigabit Ethernet.

Please feel free to contact me with additional questions @ (360) 902-3392 or e-mail **briana@dis.wa.gov**
Brian also has a Visio 5.0 diagram of the aerial path that they used. Contact Brian if it would benefit your project.

Shop Talk is a quarterly publication of the Plant Operations Support program. The newsletter is intended to be an informative and operationally-oriented medium for public facilities managers. Contents herein are also available on the program's web site at **www.ga.wa.gov/plant**

We welcome feedback on the newsletter's contents and input from readers. We reserve the right to edit correspondence to conform to space limitations. Bob MacKenzie is program manager and editor (360) 902-7257 or e-mail bmacken@ga.wa.gov. Karen Purtee serves as editorial assistant. Special thanks to Susanne Wegner for editing assistance. Plants Operations Support does not make warranty or representation, either expressed or implied, with respect to accuracy, completeness or utility of the information contained herein. Plants Operations Support assumes no liability of any kind whatsoever resulting from the use of, or reliance upon, any information contained in this newsletter.

State of Washington
Department of General Administration,
PO Box 41012, Olympia, WA 98504-1012.
Marsha Tadano Long, Director.

Eye on the Future: Sustainable Buildings

Finding a balance between resources and usage

By Karen Purtee, editorial assistant

Karen Purtee

Does "Green Building Technologies" conjure up visions of the color the outside of your facility will be painted? Does the definition of a sustainable building mean something like "one that lasts a long time?" We are hereby putting you on notice of the cutting edge thinking in design, construction, and operation and maintenance of facilities! **Green Building Technologies** and **Sustainability** refer to ways of allowing our ever-growing population to maintain our environment, while enjoying the use of all our modern conveniences. Sustainability attempts to find a balance between resources and usage not only now, but also in the future.

To explore these ideas, the South Puget Sound Chapter of the International Facility Managers Association (IFMA) hosted a discussion panel for their May meeting at the Labor and Industries Building in Tumwater. The IFMA chapter is a very progressive and energetic group headed by President Jim Vane. They take education of their members seriously.

Bob MacKenzie — your Consortium support manager — moderated the panel and discussion. Lynne Barker of Sellen Construction, Seattle; Stuart Simpson of the Department of General Administration; and Bert Gregory of Mithun Partners, an interior design company located in Seattle, were the presenters for the afternoon. Gregory and Barker discussed the fundamentals of sustainability design and Simpson gave a review of what the state is doing in sustainability design and its effect on maintenance.

Gregory answered why sustainability must be addressed. He pointed out that projection for world population growth is from six billion people today to nine billion in 50 years, with corresponding pressure on our natural resources. We, in the Northwest, are well aware of depleted forest and salmon stocks. But, the saving grace is that awareness is on the rise, and with that a great potential for change. Gregory's design firm, Mithun Partners, institutes Green Building in their basic design phase.

"We set out clear team goals, gather data, and establish decision criteria and priorities for the budget expenditures. We question the size needed, whether spaces can be used for dual purposes, and verify needs versus wants," said Gregory. "From a facilities manager point of view, the size of the facility has a direct correlation on all of the mechanics, as well as the maintenance of the building."

Site issues are listed as solar orientation (windows on the sunny side in cooler climates and not in warmer climates) and minimizing water consumption. Landscaping with natural greenery also reduces landscape chemicals, and using biofilters for stormwater can be made profitable. The latter is especially usable in the Northwest where captured rainwater can be used for toilets and landscape watering through the use of old-fashioned cisterns.

Lastly, Gregory provided a laundry list of building issues for energy and material efficiency, health enhancement, and energy life cycle cost analysis. Gregory suggests, "The evolving concepts of thermal displacement, natural ventilation and daylighting, solar passive and active energy, fuel cells, and recycled carpeting are among the ideas we will find commonplace five to ten years down the road."

"The motto for our firm is to **Reduce Demand by Design**," concluded Gregory. "In this way, we hope to conserve resources and set the example."

Lynn Barker's major emphasis has been in construction waste management of sustainable construction programs, and sharing the company's successes with others.

"Not only must we create recycled materials and siphon construction materials away from the landfill, we must promote the reuse of recycled content materials," said Barker. "The simplest construction saving comes from leasing aluminum forms instead of using wood and then hauling it to the dump."

To promote better air quality, Barker's firm monitors the materials and sequence of installation, allowing enough time for materials to cure before the next installation takes place. Another proactive measure is to utilize a multidisciplinary approach to make buildings watertight. Preventing molds begins with a review in the design stage, obtaining the services of qualified roofing subcontractors, having products meet specifications, ensuring the trade work is done in the correct sequence, and that comprehensive maintenance is conducted.

Barker also shared the philosophy of integrated design and building commissioning, with a graph demonstrating the cost of a project. The graph showed a higher cost, initially, for inclusion of commissioning and sustainable design with a project that chose the lowest first cost. But in a very short time the sustainable design took a sharp downward trend, diving below the lowest first cost, which rose for the life of the building. So, sustainable design has cost efficiency on its side, as well.

Please see Sustain, page 5

State Facilities and Sustainability

A guest article for Shop Talk provides an illuminating look at Montana's program

By Kath Williams, Ed.D.

It isn't often that one links design leadership and state facilities in the same concept. State facilities are often seen as the products of a bureaucracy with its hands tied by low-bid or other unnatural requirements. Today, however, an opportunity exists for state facilities to take an honored place in the archives of design.

The name for this opportunity has not been engraved in stone as of yet. Some have settled on "sustainability" so as not to take on the politically incorrect label of being a tree hugger or overly environmentally conscious. Those who proclaim the movement toward "green building" or "eco-smart facilities" often are not sure of their own definition. A recent audience of industrial manufacturers and distributors were shocked to be called "closet greenies" but when a life cycle analysis was performed on their product, when their factories were evaluated for recycling and resource conservation processes, they scored incredibly high.

State facilities are also still "in the closet." They are resource efficient in that they were designed to respond to local climate and topography. They minimize their impact on the environment. They are responsive to user needs, are self-regulating, and are full of spirit. Most importantly, these "green buildings" enhance human health and productivity of the people who spend most of their time within the walls. Green buildings also are welcoming places for the occasional visitor and beckon them to return. Many state facilities meet all of these criteria.

"Green" means more than environmental sensitivity. It means economic sensibility. Here most state facilities qualify. Almost every dollar spent on state facilities projects must be leveraged into more square footage than any design team member thinks is possible...but every legislator and hometown constituent demands. Economic resources, partnerships, donations, capitol campaigns have been a common part of the state construction process. Sustainable design is not a new style of architecture, a new method of construction, or a new way to operate and maintain facilities. It is an approach to decision-making that looks at the "big picture," the whole environment in which the building is set and in which it must be maintained. To get to that "big picture," it takes collaborative design. That means the inclusion of users, designers, builders, product manufacturers, installers, and the people paying the toll. Isn't that the way state facilities have always been built? By committees and countless others in the review processes?

Call it "collaborative design" and state facilities administrators are the most experienced facilitators in the industry. But often these experienced professionals are just quietly doing the job. There is a missed opportunity for leadership in sustainable design, construction, operation and maintenance. It is appropriate for state facilities administrators to step forward, because collaborative design, resource efficiency, and human health and productivity are important to every state in the union. As more state facilities are built and operated, it makes good common sense to use local resources, maximize energy efficiency, and provide an environment where human health and productivity matter. State facilities administrators have been and will continue to make this happen. Now they have an opportunity to teach the rest of the world how to do the same.

In response to these opportunities, the State of Montana is undertaking a concerted effort in this direction with the design and construction of its new Class/Lab Building (a.k.a. EPICenter Pilot Project) at Montana State University to demonstrate the validity and benefit of the "green" approach. This new facility will incorporate and integrate sustainability, energy-efficient design, collaboration with industry, and a "whole system" approach to facilities. Visit the EPICenter website at http://terra.oscs.montana.edu:80/epicenter/.

Kath Williams, Ed.D., is Executive Director of the EPICenter, Montana State University's Green Building Project. She is also the Vice Chairperson of the U.S. Green Building Council. Contact her @ (406) 994-7713 or E-mail: kathwms@montana.edu

Sustain

(Cont. from page 4)

Stuart Simpson discussed what the state is doing to encourage sustainable design. The Department of General Administration's Engineering and Architectural Division has guidelines on building commissioning, energy and environment, energy life cycle cost analysis, and indoor air quality for new construction and major renovations. The division works with the Department of Ecology and the Environmental Protection Agency and is a US Green Building Council member.

"When the client asks for sustainable services, we can do it!" said Simpson. "We have demonstrated through the Lighting Design Lab in Seattle that reduced lighting designs which do not lower the candle power can save energy plus lighten the cooling load of the building, resulting in lower mechanical costs."

Now you are on the cutting edge of thinking in design, construction, and operation and maintenance of facilities. Green building technologies and sustainability will allow our ever-growing population to maintain our environment and create a balance between resources and usage.
For more information on Green and Sustainanable Buildings, call Stu Simpson @ (360) 902—7199 or E-mail: ssimpso@ga.wa.gov

Effective Project Management Credited for World Class Memorial

Washington State's World War II Memorial is a sight to see!

Peter Waugh, P.E. has handled hundreds of projects in more situations and locations than he cares to remember, but his project management of the Washington State World War II memorial certainly ranks among the most memorable. Waugh, a project manager with GA's Division of Engineering and Architectural Services, shepherded construction of the memorial even though funds and time were chronically short. "The memorial project was a challenge because we were dealing with a number of highly emotional issues and very real time and resource constraints," said Waugh in his characteristic Scottish brogue. "We are absolutely delighted the project culminated in a memorial worthy of our cherished veterans and their families."

From the ground-up
Peter Waugh (back toward camera), discusses project details with fellow GA engineer Erasmus Othieno as the WWII memorial takes shape in April, 1999.

The World War II memorial was authorized in 1995 by the Washington State Legislature. The memorial was dedicated on May 28, 1999, during a patriotic and emotional ceremony that drew a crowd of 5,000.

The Washington State World War II Memorial in Olympia

Randy Graham was Waugh's counterpart in the Washington State Department of Veterans Affairs (DVA). DVA served as sponsor agency and managed fund raising efforts.

"The memorial came to life through the efforts of Simon Kogan (the memorial artist and sculpture), DVA, GA, the Washington Guard and many others who gave of their time and skill," said Graham. "The Plant Operations Support Consortium was likewise there when we needed them with resources and a willingness to get the job done."

The memorial design features a star-like cluster of five, 14-foot-high bronze blades engraved with the names of nearly 6,000 Washington residents who lost their lives in WWII. The engraved names form silhouette images of military personnel and civilians. These blades are placed upon a granite world map.

Help from the Guard
Sgt 1st Class David Merchant, Army National Guard (l), Mark Robb, GA's grounds supervisor, and Randy Graham, of DVA capitol programs ready a pallet of matting to be used for the WWII memorial opening ceremonies. The matting was donated by McChord Air Force Base and transported by Merchant's 2nd Bn, 146 Field Artillery unit using a high-tech cargo handling vehicle.

Nearly 3,000 commemorative granite tiles are permanently placed along the memorial's walkways, each with a unique message of gratitude or remembrance on behalf of a veteran, friend or loved one. A bronze plaque describes the major historical aspects of the war, while an amphitheater provides a place for educational gatherings and personal reflection.

The memorial is located near the General Administration Building on the corner of Capitol Way and 11th Avenue on the Capitol Campus in Olympia.

South Sound IFMA Chapter Opens Doors to Facilities Professionals

By Ron Niemi, CFM

The South Puget Sound Chapter of the nternational Facility Management Association (IFMA) is actively working oward providing a valuable forum and esouce for state and private sector acilities managers. The Chapter was hartered in 1994 in response to a rowing need for state facilities managers o keep abreast of industry trends, and xchange information. IFMA is the astest-growing facilities industry ssociation in the world.

Since its inception, the Chapter membership has been involved in IFMA egional conferences and the annual World Workplace event, which ombines educational sessions, round able and panel discussions, and vendor xhibits. Several members have obtained their Certified Facility Manager CFM) designations; which requires xperience in several competency areas, s well as the passing of a rigorous xamination. Once obtained, the designation requires skills maintenance hrough ongoing participation in ducation and professional facilities management activities.

IFMA is a wonderful way to network with professionals and stay abreast of developments in our varied fields," said im Vane, president, IFMA South Sound hapter. "Thee lationships I've developed will enhance my professional duties as well as enable enduring riendships."

A unique partnership has been developed between the IFMA chapter nd the Plant Operations Consortium, esulting in collaboration on several panel discussions, statewide eleconferences, and utilization of IFMA ore competencies in the development of the Department of General Administration's Training and Certification Program for Facility Management Positions. A recent joint enture was the May, 1999, panel presentation and discussion on ustainable Buildings, held at the Labor nd Industries auditorium in Tumwater The event was well attended by public nd private facilities managers, engineers nd architects. Both pa ners look orward to a continuing relationship, ncluding development of a web site for he IFMA chapter with links to the Plant Ops home page.

The South Puget Sound chapter board members are currently involved in a multi-phase strategic planning process to set direction for the next few years. So far, the process has yielded some clear priorities, including increasing current member participation, expanded education and programs, expanding membership, better external communications, networking, and professional recognition.

As with any organization, it's the members that make it happen. If you would like to help shape the future of IFMA, while enhancing your own effectiveness and career opportunities, please get involved.

For further information on the South Puget Sound Chapter of IFMA, **please contact Jim Vane, President, at (360) 902-3291; or jimv@dis.wa.gov; or Bob MacKenzie, Membership Chair, at (360) 902-7257 or BMacKen@GA.WA.GOV. If you would like to receive the chapter newsletter, please contact Babara Crossland at (360) 902-6945 or crob235@lni.wa.gov.**

GA Unveils Environmental Services Outreach

Services now available through POS Consortium

The Department of General Administration recently unveiled an outreach service destined to benefit Consortium members. The Environmental Services Group utilizes a proactive customer service approach providing environmental support services for the State Capitol Campus. Now, the same services can be requested by Consortium members throughout Washington State.

"Consortium members requiring environmental services can now obtain them through the POS staff at greatly reduced rates," said Brian Riley, group supervisor. " We provide Dorothy Trethewy and the Consortium a low-cost, certified alternative to expensive consultants and private firms."

The Environmental Services Group was established to provide management oversight of environmental, health, and safety issues and concerns affecting the Capitol Campus. The Group quickly found that its hands-on, technical services could be of use to other members of the Plant Operations Support Consortium. Program offerings include:

Members of GA's Environmental Services Group in full gear respond to a recent toxic situation.

➢ Pre-project planning. Environmental Services will review project scope and identify any potential environmental impacts that may affect the project. This can allow for the environmental impacts of the project to be incorporated into the initial funding request. Environmental impacts to a project can be quantified for budget funding requests. The scope of project services can then be amended to incorporate environmental issues.

➢ On-going project support. When pre-project planning has identified environmental issues, Environmental Services Group can monitor the project progression and change orders for potential environmental impact issues and then propose solutions to enable the project to proceed.

➢ Hazardous materials/waste and asbestos services. The Group can respond to Hazmat situations and complete AHEARAsurveys and associated abatement and encapsulation and/or outright remediation. The Group also is trained and certified to perform hazardous materials/waste audits of facilities.

For further information on the Environmental Services Group, contact Brian Riley – Environmental Services @ (360) 902-7183 or e-mail: briley@ga.wa.gov or contact Dorothy Trethewy, POS Consortium staff @ (360) 902-0434 or e-mail her at dtrethe@ga.wa.gov.

Advanced Building Operator Certification Course Premiers in Fall

First of its kind sure to fill fast

The Northwest Energy Efficiency Council (NEEC) has announced egistration for the first offering of LEVEL I Building Operator Certification (BOC) n Washington State. The course series will be held in Kent, Washington, tarting September 9, 1999. This will be he first offering of Level II since the program's inception in 1996. Puget Sound Energy will sponsorthe series.

BOC is a professional development program for staff responsible for operation and maintenance of nstitutional or commercial buildings. Certification is recognized by employers in Idaho, Montana, Oregon and Washington, and is accredited by he Washington Department of Labor and Industries and the Oregon Department of Consumer and Business Affairs for Continuing Education.

Level II courses are designed for experienced facility personnel who have received Level I certification or have equivalent education and training. Topics cover preventive maintenance, electrical diagnostics, and advanced roubleshooting of HVAC equipment and controls common to commercial acilities. Individuals certified at Level II will be able to work independently to develop PM programs and optimize equipment operations in their facilities.

"Over 200 facility personnel have been awarded BOC Level I certification in the region, and another 425 are enrolled to become certified," says Cynthia Putnam, BOC project manager. "With the launch of Level II certification, NEEC hopes to meet the growing demand for advanced training and certification."

In a recent evaluation of BOC, most students reported the course had improved their job performance.

Employers also noted a major benefit of the course was improved self-confidence for their employees. Participants have included the Federal Aviation Administration, Doubletree Hotels, Hewlett Packard, Weyerhaeuser Oregon and Washington State agencies community colleges, and numerous school districts and city government facilities.

Level II classes are held once a month through fall and winter. Building Operator Certification is operated by NEEC, with support from the Northwest Energy Efficiency Alliance, a non-profit, utility-funded consortium whose missio is to transform markets for energy efficient goods and services.

The fee for Level II training and certification is $850. To request a registration form, contact the BOC offic at 206-292-4793, Ext. 2, or email: **cmputnam@aol.com**

For those interested in BOC Level I, two new course series will start this fall in Spokane, Washington, on September 22, and in Medford, Oregon, on October 5. Registration forms are available at the BOC office at the numbers above.

IAQ,
(cont. from page 1)

Plant Operations Support (POS) can nvestigate and coordinate a multi-disciplinary approach to resolving ndoor air quality problems. Your POS Consortium staff can respond with on-ite visits, testing, and assessments, bringing in expert consultants as needed. Review of maintenance ecords, response/repair logs, reports of previous investigations, and interviews with affected employees provide background for further investigation. A sampling plan is developed and followed if tests are needed to define potential sources of problems such as fiberglass particles in the air, bacteria and fungi contamination, or inadequate fresh air. Written reports documenting status of the investigation, interpreting laboratory findings, and providing steps for remedial actions are provided by POS. Follow-up with site visits and post-remediation testing may be appropriate. So--if indoor air quality problems persist and outside assistance is needed, give Plant Operations a call. We will discuss the situation and work with you to tailor a response to your specific needs – but we probably can't help with painting th conference room and replacing the carpet by yesterday! Contact Dorothy Trethewy (360) 902-0434 or e-mail **dtrethe@ga.wa.gov.**